

Abstract

As yet heads of belted passengers, when thrown forwards in real-world front collisions, crush into a steering wheel, dashboard, windshield or backrests of front seats despite
5 deployed airbags.

A protective device is equipped with wires, energy-absorbing, vibration-dampening delimiters, a collapsible upper portion of steering column and a pair of independently operating piston devices. At least one piston rod deflects in any front or rear collision. That
10 deflection is exploited to pre-tension seat belts of belted passengers up to a predetermined length of seat-belt retraction and to retract the collapsible upper portion out of the head-injury area.

In the second feature of invention, in order to prevent buckling, achieve the highest efficiency of energy absorption and lower impact forces, to which passengers and delimiters are exposed, a cone-shaped hub reams, folds and buckles a deformable longitudinal runner
15 during which the piston rod, guided by a bearing box and the hub, loosely guides that runner.

In the third feature, in order to further lower impact forces, dampen vibration and prevent belted passengers from strangulation mating members of the delimiters perform work of deformation and friction, block further movement of seat-belt wire, deflected by the moving
20 piston rod, in excess of that predetermined length of seat-belt retraction and maintain lengths of all the retracted seat belts.